MJN Impact of Video Games on Academic Performance in School Children

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ABSTRACT

Background: There are about two billion players of video games worldwide, making them a popular pastime. Nonetheless, experts and the media have stressed the possible risks associated with playing video games too often. The purpose of the study is to ascertain how playing video games affects academic performance. **Methods:** A cross-sectional descriptive study was carried out at two elementary secondary schools in Karbala city with 300 students, were playing video games during a parent meeting in school and data was collected using interviewer-administered questionnaires. **Results:** The children aged 11-13 years old have a high percent (51%), in regard to the item socio-economic status that the middle have more than two thirds the item residency, more than 50% were live in urban areas; concerning the educational level of children' fathers more than half had (53%) primary school graduation, on the other hand nearly one third of the mothers had (34%) secondary education (27%). Less than thirty percent of the studied children had poor school achievement for children were poor. There were found highly significant association between the socio-demographical characteristics (age, socio-economic status, level education of father, level education of mother) with school achievements of children, but the number of year's failure in school shows no significant with their school achievements. **Conclusion:** Poor school achievement for the studied children was found highly associated with all socio-demographical characteristics with school achievements, except the number of year's failure in school. **Recommendations:** The study provides information through nursing education to the parents to limit play time on electronic games for their children, which had a bad effect on their basic skills and cognitive abilities. Additionally restrict the quantity and variety of games and swap them out for instructive ones.

Keywords: *Children; School Achievement ; School Age; Video Games*

INTRODUCTION

Video game development follows computer progress for the next ten years. The first video game to be commercially successful was Pong, an arcade version of table tennis, which came out in 1972. Other arcade games like pinball then followed (Zhouxiang, 2023). Similar to other arcade games, pong was available in playrooms, cafes, restaurants, and public spaces. Its widespread appeal has encouraged people to play video games at home (Yazgan *et al*., 2024). The amount of time spent playing video games has consistently increased, rising from 5.1 hours per week in 2011 to 6.5 hours per week (Almulla *et al*., 2024). While playing video games might improve working memory, focus, and multitasking, overusing the medium can also be detrimental. Overindulgent video gamers could perhaps exhibit a lack of social skills, issues with peers, and a lower level of scholastic and professional achievement if they play video games for most of the day (Farber & Merchant, 2024). By their very nature, interactive media provide an excellent paradigm for learning. Specifically, video games have a schedule that is known to strengthen habits by relying mostly on positive reinforcement (Gkintoni *et al*., 2024).

On the other hand, educational video games and other video games exert different influences on youngsters,

with educational games providing numerous advantages, whilst other video games may yield both beneficial and detrimental effects. Educational games provide systematic advantages for cognitive, social, and emotional growth, but other video games may yield varied results based on their content and duration of play (Puccio *et al*., 2024). Nursing professionals are essential in advising families on the proper utilisation of video games for children through crucial guidelines and regulations for guaranteeing that children's video game usage is secure and advantageous, such as guidelines for screen time according to the American Academy of Paediatrics (AAP), encompassing video games, for children aged 6 years and older: Promote healthy habits by establishing consistent restrictions on screen time to prevent interference with sleep, physical activity, and other beneficial behaviours (Yabrodi *et al*., 2025).

Significance of Study

Children use electronic media for a variety of purposes these days. In addition to offering a youngster a secure haven, electronic media serves additional purposes like amusement, socialisation, and communication. Electronic media has developed to offer more possibilities than just a television and a game console in the modern era. Smartphones, tablets, laptops, PCs, and more sophisticated TVs and game consoles have all been added to it. The impact of video games has been a big issue for social scientists, parents, and even politicians due to their widespread appeal (De Paoli, 2024). Raising awareness about the realities that children create from playing video games is ideal. Parents and early childhood educators will also benefit from understanding some child behaviours that may be connected to video game activity. In addition, nurses play a crucial role in detection, examination, preparation of optimal programmes, liaison with mental health professionals, and provision of training. Nurses play a vital role in the multidisciplinary team addressing gaming issues among teens to maintain academic success and well-being in those affected.

METHODOLOGY

Design of the Study

A purposive sample of 300 children and their fathers or mothers from 5 schools in Karbala city, Iraq from March to April 2024 were enrolled. The child was from the schools in Karbala city, Iraq. 300 children and their parent were requested to participate in the study, and 300 children completed the survey (response rate of 100%). This study attains research committee approval of Karbala health directorate. All participants involved in the study and signed an informed consent.

Construction of Study Instrument

Three primary components make up the developed questionnaire, which was created after a survey of the literature and earlier studies in the field (Nadeem, Oroszlanyova & Farag., 2023; Othman *et al*., 2021; Adžić *et al*., 2021; Moreno Guerrero *et al*., 2020). **Part I:** Is where the data is gathered. Age, place of residence, number of siblings, and other sociodemographic details about the students are included in this portion of the sociodemographic data sheet that was introduced with the scale. Years in question Failure, the marital condition of the parents, the educational status of the parents and the father, the occupations of the mother and father, **Part II:** This tool was designed to evaluate child playing; six items were intended to be included in this part. Each of the items has a few alternatives, and **Part III:** The instrument was constructed to assess children' school achievement according to parent opinion with 10 items; each item has two options (yes/no).

Statistical Analyses

The data collected during this study were analysed through the use of SPSS 26.0, Descriptive statistics were used, including percentage and frequency distribution (f), Chi-Square ($\chi2$), r test to assess correlations between the study variables.

Ethical Consideration

The researchers obtained ethical clearance from the College of Nursing, University of Warith Al-Anbiyaa, Karbala, Iraq with the reference number 325 on 10th October 2023.

RESULT

Table 1: Socio-demographic Characteristics of Participants (n = 300)

Variable		No. (n)	Percentage (%)
Age (years)	10-11	147	49%
	12-13	153	51%
Fathers' Level of education	Illiterate	27	9%
	Can read and write	87	29%
	Primary school graduate	160	53%
	Secondary school graduate	20	7%
	institute and college graduate	6	2%
Mothers' Level of education	Illiterate	61	20
	Can read and write	80	27%
	Primary school graduate	50	17%
	Secondary school graduate	102	43%
	institute and college graduate	7	3%
Socio-economic Status	High	38	13%
	Middle	206	68%
	Low	56	19%
Residency	Urban	165	55%
	Rural	135	45%
Years of School Failure	No History of School Failure	127	42%
	Failed One Academic Year	89	30 %
	Failed Two or More Academic Years	84	28%

Table 1 shows that more than half of children (51%), aged 12-13 years old, have a high percent in regard to the item of socio-economic status; more than two-thirds (68%), were in the middle one. Regarding the item residency, more than half (55%) live in urban area, concerning the educational level of children' fathers it was found that 53% have primary school graduation, 29% can read and write, 9% of the fathers was Illiterate. Number of years of failure in school (42%) and (7%) institute and college graduates. On the other hand, mothers' level of education was secondary and read and write (34% and 27% respectively), while 20% were illiterate, and 17% had primary graduation a minority of the mothers (7%) had institute and college graduation. Regarding years of failure in school, 30% have 1 year, while 28% have 2 years and more.

Table 2: Percentage Distribution of Children' Playing Characteristics

Variable	Category	Frequency (n)	Percentage (%)
Device Purchaser	Father	205	68.0%
	Mother	86	25.3%
	Brother	9	6.0%
Type of Device used by Children	Parents mobile phone	168	56.0%
	Child's own mobile phone	84	28.0%
	Computer	12	4.0%
	i pad	36	12.0%
Method of Game Access	Downloaded from the Internet	290	97.0 %
	Purchased	10	3.0%
Preferred Type of Play	Physical play (e.g., Ball Games)	64	21.0%
	Rough-and-tumble play (Fighting)	174	58.0%
	Educational or constructive play	62	20.0%
Daily Play Duration (Hours/Day)	1 hours	28	9.3%
	2 hours	68	23.0 %
	3 hours	114	38.0 %
	4 hours or more	90	30.0%
Daily Study Duration at Home (Hours/Day)	1hours	169	56.3%
	2hours	76	35.0 %
	3hours	48	16.0%
	4 hours or more	7	2.3%

Table 2 revealed that more than two-thirds of children' fathers (68%) have bought the playing device, while one quarter (25%) of the mothers do that. The minority (9%) of children's brothers have bought the

playing device. Regarding the type of playing device used by children; more than half (56%) used parents' mobile, 28% used their own mobile,12% used iPad and a minority (4%) used computers. According to the question of how they got these games, the highest percentage (67%) of children were loading games from the net and just one third (33%) bought games. Concerning the type of play children like the highest percent (58%) like fighting games, more than one fifth (21%) were like ball game and (20%) like education game. Regarding the playing duration of using play game per day less than two fifths (38%) were playing 3 hours daily, 30% were playing 4 hours or more daily, while 23% were playing 2 hours or more daily. Regarding duration of study at home, less than two-thirds (65%) studied for 1 hour at home, while 35% of them were study 2 hours at home, 16% studied for 3 hours at home and only 2% studied for 4 hours or more at home.
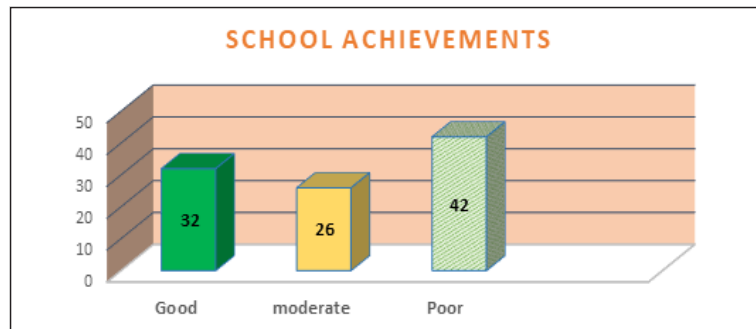

Figure 1: Children' School Achievements

Figure 1 shows the school achievements of children, more than two fifths (42%) have poor school achievements, 32% have good school achievements and 26% have moderate school achievements.

Table 3: Relationship between Demographical Data of Children and School Achievements

Variable	X^2	df	P value	Sig.
Age (years)	37.609	12	0.000	HS
Socio-Economic Status	35.213	9	0.000	HS
Level Education of Father	25.711	12	0.012	S
Level Education of Mother	30.620	12	0.002	HS
Residency	30.620	12	0.002	HS

NS: Non-significant (NS) (≥0.05), (S) significant (p<0.05), (HS) high significant<0.01,

The table (3) clarifying association between demographical data and school achievements, were found high significant relation, but the number of year's failure in school shows no significant with their school achievements.

DISCUSSION

The current study's results revealed that more than half of the sample lived in the urban areas and were aged 12-13 years old, used the video games, may interpret this age is pivotal as it signifies a shift from childhood to early adolescence, during which peer influence and social interaction gain prominence. In addition, it indicates that urban regions may offer enhanced access to technology and gaming platforms. The cities generally possess superior infrastructure, encompassing internet connectivity and electronic gadgets, hence enhancing the accessibility of video games. GomezRomero-Borquez *et al*. (2024), found that video games have developed into a social media platform that links people of different ages, worldwide in vast online communities. A recent study discovered that over half of the children's fathers surveyed were elementary school graduates, which may explain why approximately 68% of the sample received electronic gadgets from their fathers, who believed that these devices enhance their skills and keep them updated. While Othman *et al*.(2021) found less than a quarter of children where their fathers had college degrees.

Furthermore, the researcher found over 50% of the sample exhibited a modest socio-economic status. The presence of electronic games among these children may be regarded as a consequence of good economic conditions, which are exhibited as correlates with poor academic performance; whereas the researcher discovered that 30% had one year of academic failure. There is a possibility that it is connected to the

inordinate quantity of time spent using technological gadgets. In corresponding, Sun and Li (2024) found that the children with respectable financial status who spend excessive time on video games exhibit increased externalising problems and diminished academic performance. On the other hand, the researcher found that 68% of the father's bought devices for their children, this explains why those children are interested in playing games. According to research conducted in Duhok City, Iraq, by Mohammed (2025) found 45.9% of parents supervise their children's gadget use, indicating that many parents have only modest control over their screen time. This degree of supervision suggests that parents recognise the value of technology in their children's lives and may be investing in devices to effectively monitor and manage its use.

Concerning the distribution of child playing type, the researcher discovered that 58% of children were using parents' mobile devices, and the majority of the sample were loading games from the internet, these reflect the lack of information among parents about the dangers of these electronic games, especially the fighting games. As table 2 shows, more than half of the sample liked fighting games, and nearly half spent three hours using video games, which can be rationalised by the fact that the adolescents who like competitive settings and fast-paced action may find resonance in fighting games, which frequently require strategy, competition, and quick reflexes. In addition, the community's broader cultural or social trends may be reflected in the desire for fighting games and the amount of time spent gaming. Where the popular game genres are frequently the focus of gaming communities, and teens may be persuaded to participate in these activities by their friends or online groups. These results agree with Rial-Boubeta *et al*. (2024), who found the most samples want to play with violent games, which had a bad reflection on their behaviours as bullying. In corresponding, Khalil *et al*. (2019) found one-third of mid-adolescents who played video games preferred the violent games, according to an Indian study. Other than that, these results disagree with Aslan and Turgut (2024), where they found the majority of parents saw their children's mobile device use as dangerous and detrimental, while only parents who used their devices themselves saw any benefit. In addition, the researcher found about one-third of the sample were using the educational games, which can substantially enhance cognitive ability in teens by stimulating various brain regions and fostering active learning. Based on other research, Gkintoni *et al*.(2024) report that the games based on education had shown potential in enhancing the physical and mental health of children and adolescents. It enhances motivation, dedication, and compliance with healthy practices. Also, according to Zheng *et al*. (2024), the school-age children have grown up in a society where electronic devices are commonplace. Consequently, employing the digital games in the classroom can be more successful than traditional lecture-based methods.

The prevalent engagement of urban adolescents aged 12-13 with video games may yield both beneficial and detrimental impacts on their development. Video games can improve problem-solving skills, spatial awareness, and multitasking capabilities. But excessive gaming may result in reduced physical activity, social isolation, and possible adverse effects on mental health. As the researcher in the current study found regarding to the table 3, nearly half of the students who played video games have poor school achievement. Present finding agrees with Savić *et al*. (2023), where the study's findings indicated that, on average, students who engage in gaming may exhibit marginally lower academic performance compared to their peers who do not participate in gaming activities. The amount of time spent studying during the exam period is somewhat correlated with students' overall performance levels. On the other hand, three-quarters of the parents think that playing video games affects their children's school achievement, where many factors, such as cultural norms, educational needs, and the consequences on conduct and performance in the classroom, influence parents' views on the effect of video games on their children's academic success. These results agree with a study by Kuo *et al*. (2024) that identified that a significant number of children are at risk due to excessive video game use, which contributes to heightened aggression, sedentary behavior, and adverse effects on academic performance.

According to Othman *et al*. (2021), In Erbil Iraq, parents are concerned that their children's poor academic performance is a result of their children spending too much time playing video games and not enough time studying, where the survey indicated that 66% of kids who played video games were more likely to miss assignments than the 10.5% of children who did not play. Regarding the relationship between the demographical data of children and school achievements, a highly significant relation was found between them, but the number of years of failure in school shows no significance with their school achievements. Shah

and Shah (2018) demonstrated that students from low socioeconomic backgrounds acquire academic skills at a diminished rate compared to their counterparts from higher social strata. Research by Othman *et al*. (2021) repeatedly indicates that youngsters from elevated socioeconomic origins generally exhibit superior academic performance in Erbil, Iraq, due to their superior access to educational resources and technology, which can augment learning chances.

In corresponding, Husna, Jamin and Juliand (2022) found in their findings a negative correlation between academic performance and online gaming activities. This is due to the observation that extended gaming sessions diminish the capacity to concentrate on academic responsibilities. Furthermore, findings by Gath *et al*. (2025) demonstrated that elevated screen exposure in childhood correlates negatively with subsequent language and educational attainment in children. Kuo *et al*. (2025) found the frequency of play did not adversely impact students' academic self-efficacy, academic engagement, or academic performance. A significant correlation was identified between symptoms of video game addiction, academic cognitive engagement, and peer relationships when the primary motivation for playing video games was not entertainment related. This implies that the motivations for engaging in video games are more indicative of problematic gaming behaviours than the frequency of play.

Limitation

Video games differ markedly in content, duration, and genre (e.g., educational versus violent), complicating the generalisation of findings. Also, mixing factors to consider, elements such as parental engagement, socioeconomic status, study practices, and peer influence may also affect academic performance, yet they are difficult to isolate. Likewise, timing limitations; cross-sectional investigations offer a momentary overview but fail to elucidate long-term effects or causal relationships. Similarly, technical innovations and swift developments in video game technology and trends may render findings obsolete rapidly. In the same way, the metrics for academic performance, standardised test scores or grades may inadequately represent various dimensions of academic performance, including creativity, collaboration, and critical thinking abilities. In addition, ethical considerations: restricting video game usage within the study design may influence participants' behaviour or well-being, thereby raising ethical issues. The distinguishing the effects of video games from other screen time activities, such as social media or online education, can be difficult. However, the influence of parental and teacher supervision or encouragement may affect both video game usage and academic performance, complicating the results.

CONCLUSION

Majority of the children in this study spend 3 hours playing video games and 1 hour studying at home. High percent of children in this study have poor their School Achievements. Most of the parents' children in this study do not encourage their children to play video games, enjoy freedom at home, attend school daily, not do homework, tend to fight games or have their child imitate characters in games. The socio-demographical characteristics (age, level of education of father, level of education of mother and Socio-economic status) were found to be highly significant with School Achievements of children, but the number of years of failure in school shows no significance with their School Achievements. Longitudinal studies should be the main focus of future research. These studies would look at how playing video games affects academic performance over time in people of all ages and levels of education. It is also important to look into the role of nurses in teaching parents and kids about the effects of gaming on their brains and schoolwork, as well as the number of kids who are addicted to video games. To learn more, it would be helpful to look at certain parts and mechanics of video games to see how they affect learning in different ways, as well as look at social, cultural, and economic factors that affect people's attitudes towards learning through games. Nurses are very important in making resources to lessen the negative effects, such as school awareness programs, teaching parents, and pushing for stricter rules on games that promote bad behaviour. This kind of in-depth research will help with the problems that gaming addiction causes in schools for students of all ages.

Recommendation

The study suggests that parents should set clear time limits, like 30 to 60 minutes on school nights and up

to two hours on weekends. They should also limit their children's gaming to less than an hour a day and the number and type of games they play—educational games instead of violent ones. Nurses play an important role in helping parents promote healthy gaming habits by encouraging regular breaks to avoid fatigue and support physical activity, keeping an eye on gameplay to make sure the content is appropriate for the child's age, and encouraging open conversations with kids about their gaming experiences to promote responsible and informed use of digital technology.

Conflict of Interest

The authors declare that they have no competing interests.

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